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ABSTRACT

What the classroom of the next century will be like can only be speculated upon, but, almost certainly, any changes will require self-examination of the human essence in relation to technology. One outcome of technological change may be increased freedom for humans to relate to each other on a more human basis. Also, it appears that education will undergo a major shift from the present product (fact) orientation to a more humanitarian (unification) orientation. Consequently, education will become a resource network involving the use of data banks, peer learning, mentors, and parents. There will be greater participation of students in their own learning, and teachers will assume the role of learning brokers. Classroom work will tend to take a seminar form, but often education will occur outside of traditional schools, via telecommunications to mass audiences, through apprenticeships and use of mentors. Present sociocultural issues will be transcended through recognition of diversity as something positive. Easier communication will become possible with the use of binary codes, instant electronic translation, holistic language learning, and mental telepathy. Processes and skills development will receive greater focus than facts, per se, and higher order cognitive abilities will develop. (KH)

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"CLASSROOM" OF THE FUTURE: 2058 AD

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Predicting the classroom of the 21st century is at best a precarious proposition. The accuracy of any speculation may well be forgiven, however, since we will not be here to enjoy either its benefits, nor suffer its consequences. Thus, considerable latitude is possible in presenting future speculation regarding the nature of the classroom some 75 years hence. Although purely speculative, some guidance is available from contemporary as well as futurist writings.

Futurist literature reveals a wide spectrum of predications. These range from:

1. The Pessimistic Future. A future characterized by an increasing number of localized wars ending in nuclear destruction, one of overpopulation, end of affluence, increase in societal schisms, and wallowing in our own waste products.

2. The Optimistic Future. A brave new world consisting of new forms of social institutions, a world society/community, end to world hunger and opportunities and developments that we cannot even conceive of today.

There is of course a middle ground between these futures, one characterized by uneven social and technical advances. Despite the wide range of futurist predications several factors are clear:

1. That futurist predications are based on present socioeconomic and political trends.

2. That technological changes and accompanying social changes will occur at an ever accelerated rate.

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3. The ability to control or direct change is predicated on solving the problems noted by the pessimist.

4. Change will be wide range because of vast alterations in technology, urbanization, economics, politics, religion, family and education.

In effect, the future is mitigated by social, technical, and institutional forces which are dynamic in nature, with each contributing to the vortex of change itself. A comprehensive review of the nature of the future is beyond the scope of this presentation and is available elsewhere.

Suffice it to note that, as presently construed, our educational system is largely production oriented. The role of the individual is that of a receiver of information with little or no role in defining one's education. Illich (1970) posits that the present "production" educational processes inhibit rather than produces liberation of human thought. He notes that:

> School teaches us that instruction produces learning. Once we have learned to need school, all our other activities tend to take the shape of client relationships to other specialized institutions.

In other words, educational consumption produces educational demand and schools define achievement through an elaborate and subtle process. Illich proposes that education can only be made truly accessible to all by transferring the responsibility from the institution to the individual.

Buber (1968) indicated that the ideal vision for mankind must be based on human encounter and thus affirms man's essence by relating creatively to the external world. Education, he notes, will undergo violent transformation out of

which will come a rebuilding of urban schools through corporate partnerships with educators and students alike.

In effect, schools will change. Although the precise nature and degree of change are uncertain. Contributing to the change will be technological advances and alteration of our social and economic systems. Interestingly, these changes will require self-examination of the human essence in relationship to, and use of, technology. An expected outcome of technological change, it is posited, will be increased freedom for humans to relate to each other more on a human basis.

Maruyama's (1982) Post-Industrial Era logic, illustrated in Table 1, certainly appears possible. As suggested, future emphasis will be placed on social interaction, striving for cultural satisfaction, cooperation, etc. Many of these changes will become evident in the schools of the future; particularly in the area of technological advances, sensory thinking and participatory education.

Table 1 Logic Differentiation

Between Industrial and Post-Industrial Eras

Industrial Era	Post-Industrial Era
standardization	destandardization
homogeneity	heterogeneity
competition	symbiosis
hierarchy	interaction
conquer nature	harmony with nature
material satisfaction	cultural satisfaction
efficiency	aesthetics and ethics
thinking in categories	thinking in social contexts

Technological Advances

Nowhere will the future of education be more affected than by technological advances. Technological innovations have assumed almost geometric growth as evidenced by technical advances in the past 50 years. Life in the 1930's, characterized by the lack of rural electrification, automobiles, or plumbing, little resembles the 1980's as evidenced by electronic communication, satellites, lasers, and jet travel. Given current trends, it appears very likely that technology will contribute to education through:

1. Increased use of teaching machines.
2. Use of computers as central information banks.
3. Mass electronic communication to transmit classroom lessons/lectures.
4. A shift to information processing and data analysis rather than learning of facts.

Technology will, in effect, free humans to go beyond their present cognitive and intellectual abilities and to use much higher order thinking. In brief, the educational system will be infused with innovation. What remains to be seen is the educational system's ability to absorb technological changes. However, it appears certain that the focus and role of teacher as a transmitter of knowledge versus the focus of the pupil as the learner will undergo many alterations. Additionally, our present conceptualization of the classroom will undergo major alterations as will the nature of basic skills instruction such as reading, teaching and thinking.

Sensory Thinking

Biochemical and sensory research has greatly advanced knowledge regarding the interrelationship between biochemical and cognitive functions. Advances in biochemical research in particular would suggest that there will be a place for use of biochemical stimuli to aid learning acquisition, memory function and possibly even behavior modification. This is not to suggest that there will be smart pills, but rather the use of stimuli to facilitate learning.

One would also expect in the future that the school would adjust education to biological and sensory differences between children. Children have varying biological cycles, and varying times of mental, physical and intellectual efficiency which, if considered in the instructional process, could increase learning. For example, children in the future may be attending classes in the evenings when they reach their peak of efficiency and there may be instructional programs which enhance the student's sensory stimuli modes.

Some learners are either sensory reducers or sensory augmentors. The augmentors tend to amplify the visual and auditory stimuli and the reducers tend to reduce the level of stimuli with which they are presented and thus require much higher stimuli. In addition, the growing interest in psychic phenomenon of the brain will likely expand into a new science. Students will experiment with learning to alter their consciousness to enhance cognitive expansion as a means of sensory learning.

There may be some great temptation for school personnel to manipulate the educational destinies of their students using biochemical and sensory stimuli. It, therefore, becomes critical for society to determine the extent of biochemical and sensory stimulus goals in education so as to protect the personal freedom of each individual to realize their own potential. Parents and teachers must share in the process of teaching human values and the development of critical thinking skills with a sense of moral responsibility. The ultimate goal for which to strive rests on recognition of the basic equality and worth of all human beings and their highest possible protection.

Participatory Education

As the structural aspects of education change, so will the role and relationship between the teacher and learner. One can expect the role of the teacher as conduit of knowledge will change to one of an educational broker. That is, future teachers will not teach facts per se but rather act as learning facilitators--guiding learning, acting as intellectual leaders, counselors, and as a resource. Professional managers will manage the technical aspects of educational networks, while teachers focus on their roles as mentors. Similarly, students will begin formal schooling much earlier, by age 3-4, and by the early teens will play a major role in becoming responsible for their own learning, which will be facilitated by microcomputers, learning machines, and instantaneous electronic and video communication with data banks.

The focus on learning in the future will be on analytical skills building, synthesis, and application of data rather than acquisition of facts. Educational competition, as known now, will give way to educational cooperation and striving for intellectual and creative excellence for the general welfare.

The language of education is certain to undergo rapid transformation. There will be educational languages rather than just English as a medium of learning. Technological shorthand will replace previous modes of written expression as illustrated in the following comparison of languages:

> Do godamoighty know what a's doing a-oakin' o' mea?
> I beant wonn as sows 'ere a bean an' yonder a pea;
> An' Squoire 'ull be so mad an' all--a' dear a' dear!
> And I 'a managed for Squoire coom Michaelmas thutty year.
>
> Northern Farmer - Tennyson

> Leucci went on drinking. Soon he was drunk enough that his vision of himself no longer hurt. Nothing hurt. He could talk to these men without being ashamed or afraid.
>
> Prince of the City - Daley

> The Wordstar program on the Apple micro won't work because the CP/M diskette is incompatible with the Z-80 board . . . so access Stanford with the modum and use Wilber.
>
> Overheard conversation

Commonplace in the future will be social communication made up of multilingualism and technical languages consisting of binary codes and abbreviations. Technology and its accompanying transformation of language can be expected to eradicate social inequity and increasingly foster social and cultural respect.

Accompanying the changes in language and shift in educational focus will be modification in the curriculum.

Structured curriculum will give way to instructional modules, illustrated as in the following curricular contrast:

1983*	2058
English - II (composition)	Hierarchical Cognition
Spanish - II	Universal Binary Communication
P.E.	Transorganic Stimulation
Biology	Molecular Synthesis
Geometry	Oblique Factorial Analysis
History (Modern European)	Psychosocial Analysis

*College Preparatory - 10th grade courses

Much of the future curriculum will be self-paced, allowing much more rapid completion of coursework and permitting accelerated progress.

Summary

The nature of the classroom, indeed every aspect of education, in the future will be beyond anything we can imagine today. The breadth of these can only be touched upon. In summary it appears that the future in education will be characterized by:

- A major shift from the product (facts) value orientation to more humanitarian (unification) orientation; consequently, education will become a resource network (i.e., use of data banks, peer learning, mentors, parents).
- A shift to greater participation of students in their own learning.
- Teachers assuming a role as learning brokers.
- Future classroom taking a seminar form.

- Education expanding (beyond traditional schools) via telecommunications to mass audiences, through apprenticeships and use of mentors.

- The transcendance of present sociocultural issues through recognition of varying social, cultural and language attributes as positive.

- Easier language communication via use of binary codes, instant electronic translation, holistic language learning and mental telepathy.

- A focus on processes and skills development (not facts per se) and development of higher order cognitive abilities.

In brief, the future of education offers a very real possibility of a "brave new world." It is only left to us to seize the opportunities.

BIBLIOGRAPHY

Buber, M. The Structure of Evil. New York: The Free Press, 1982.

Illich, I. Deschooling Society. New York: Harper and Row, 1970.

Maruyama, M. The Post-Industrial Logic. In Spekke (Ed.) The Next Twenty-Five Years. New York: Basic Books Press, 1982.